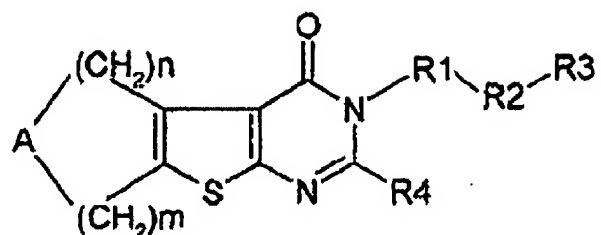


1. (Original) A compound of the formula (I)



in which

A is O, S, SO, NR₅ or CH₂;

R₅ is H, C₁₋₅-alkyl, aryl, aralkyl, acyl or alkoxycarbonyl;

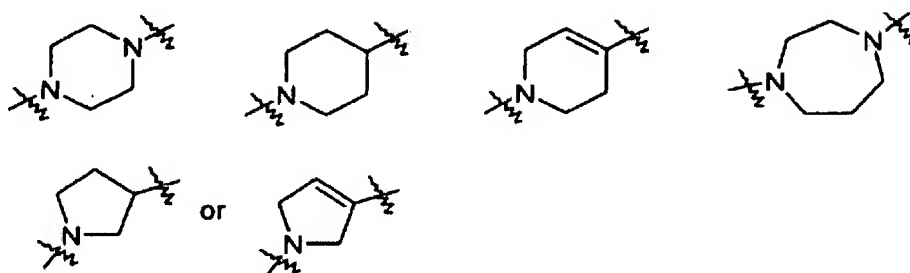
R₄ is H or methyl;

n is 1 or 2;

m is 1 or 2;

R₁ is C₁₋₈-alkylene;

R₂ is a group of the formula

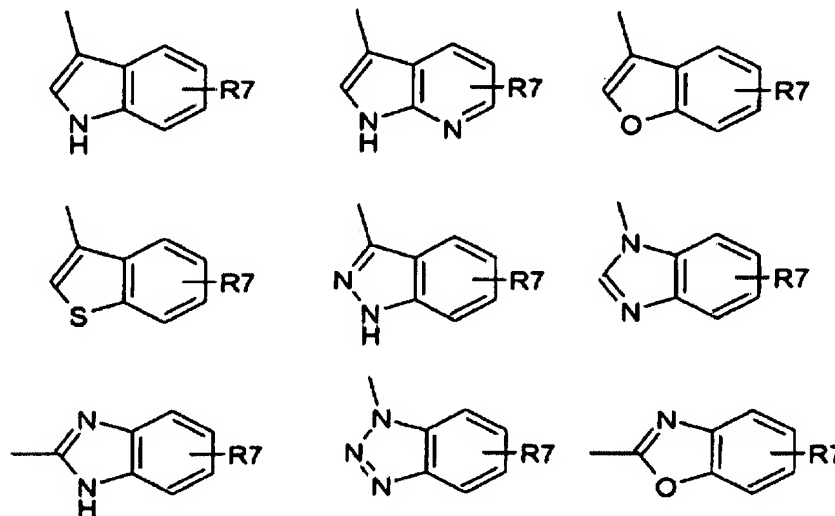


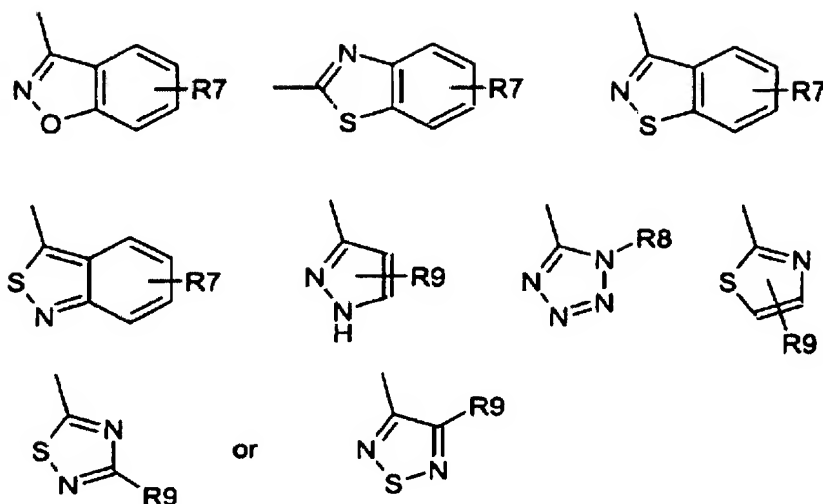
R₃ is 5-membered heteroaryl which may be fused to an aryl or heteroaryl radical, where the heteroaryl and, optionally, the fused aryl or heteroaryl radical may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy -NH₂, -N(R₆)₂, -NH(R₆), aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl, where the substituents aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN,

halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R₆)₂ and -NH(R₆); and the radicals R₆ are independently of one another C₁₋₅-alkyl, and physiologically tolerated salts thereof.

2. (Original) The compound according to claim 1, wherein R₃ is 1H-indol-3-yl, 1H-pyrrolo[2,3-b]pyridin-3-yl, 1-benzofuran-3-yl, 1-benzothien-3-yl, 1H-indazol-3-yl, 1H-benzimidazol-1-yl, 1H-benzimidazol-2-yl, 1H-benzotriazol-1-yl, 1,3-benzoxazol-2-yl, 1,2-benzisoxazol-3-yl, 1,3-benzothiazol-2-yl, 1,2-benzisothiazol-3-yl, pyrazol-3-yl, 1H-tetrazol-5-yl, 1,3-thiazol-2-yl or 1,2,4-thiadiazol-5-yl, which may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, halogen, CN, SCH₃, trifluoromethyl, hydroxy, -N(C₁₋₅-alkyl)₂, -NH(C₁₋₅-alkyl), -NH₂, aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl, where the substituents aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, halogen, CN, SCH₃, trifluoromethyl, hydroxy, -N(C₁₋₅-alkyl)₂, -NH(C₁₋₅-alkyl) or -NH₂.

3. (Previously Presented) The compound according to claim 2, wherein R₃ is a radical of the formula

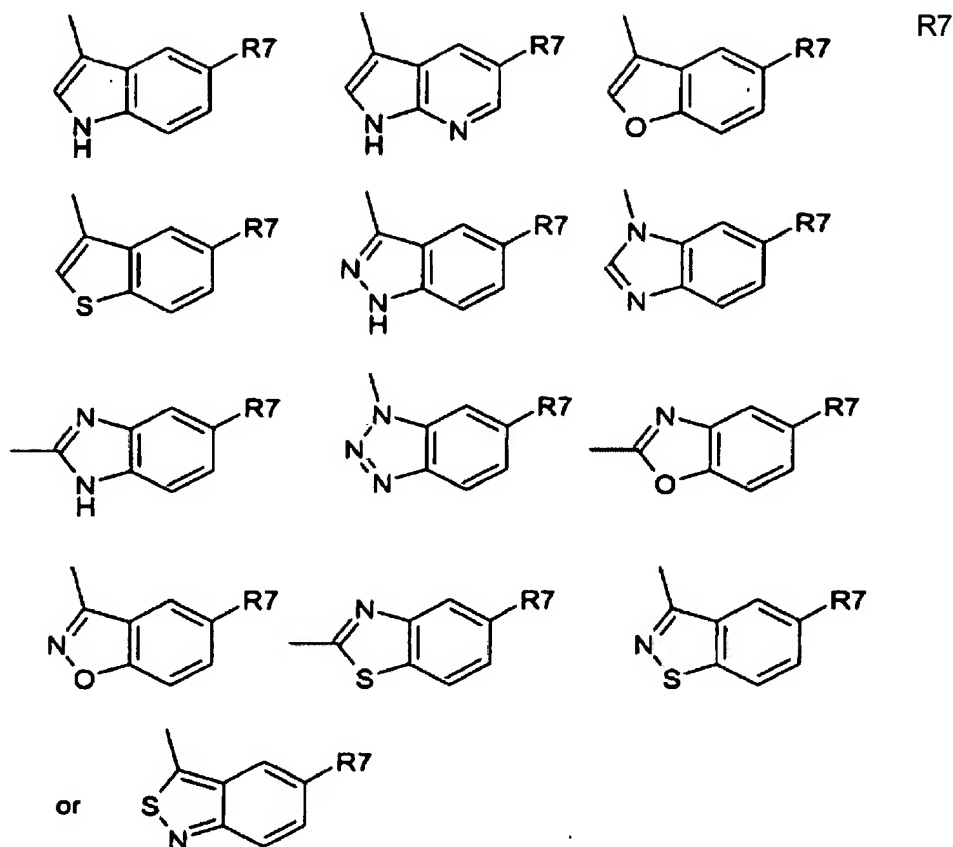




in which

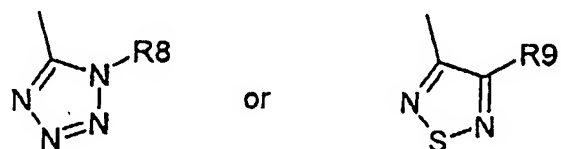
- R7 is H, C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R6)₂ or -NH(R6); and
- R8 is H, C₁₋₅-alkyl, aryl, aralkyl or heteroaryl;
- R9 is H, C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R6)₂, -NH(R6), aryl, aryloxy, aralkyl, aralkyloxy or heteroaryl, where aryl, aryloxy, aralkyl, aralkyloxy or heteroaryl may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R6)₂ and -NH(R6); and the radicals
- R6 have the meaning indicated in claim 1.

4. (Original) The compound according to claim 3, wherein R3 is a radical of the formula



in which R7 is as defined in claim 3.

5. (Original) The compound according to claim 3, wherein R3 is a radical of the formula



where R8 and R9 are as defined in claim 3.

6. (Currently Amended) The compound according to claim 4, wherein R7 is H, C₁₋₅-alkyl, preferably methyl, halogen preferably chlorine or halo-C₁₋₅-alkyl, preferably trifluoromethyl.

7. (Currently Amended) The compound according to claim 5, wherein R8 is C₁₋₅-alkyl ~~preferably methyl, ethyl or isopropyl~~ or aryl, ~~preferably phenyl~~.

8. (Currently Amended) The compound according to claim 5, wherein R9 is C₁₋₅-alkoxy, ~~preferably methoxy, ethoxy or isopropoxy~~, aryl, ~~preferably phenyl~~ which may be substituted, ~~e.g. by chlorine~~, or heteroaryl, ~~e.g. 2-thienyl~~.

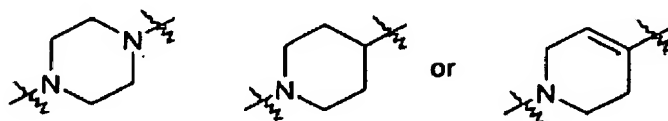
9. (Currently Amended) The compound according to claim 1, wherein A is O, S or NR₅, where R₅ is as defined in claim 1 ~~and is preferably H or methyl~~.

10. (Original) The compound according to claim 1, wherein R₄ is hydrogen.

11. (Original) The compound according to claim 1, wherein n is 2 and m is 1 or n is 1 and m is 2.

12. (Original) The compound according to claim 1, wherein R₁ is eth-1,2-ylen, prop-1,3-ylen, prop-1,2-ylen, 2-methyl-prop-1,3-ylen, but-1,2-ylen or but-1,3-ylen.

13. (Original) The compound according to claim 1, wherein R₂ is a group of the formula



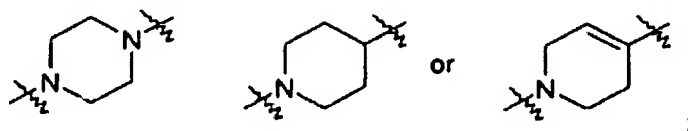
14. (Original) The compound according to claim 1, wherein

R4 is hydrogen;

n, m are 2, 1 or 1, 2;

R1 is eth-1,2-ylene, prop-1,3-ylene, prop-1,2-ylene, 2-methylprop-1,3-ylene, but-1,2-ylene or but-1,3-ylene;

R2 is a group of the formula



and

R3 is as defined in claim 1;

15. (Original) The compound according to claim 14, namely

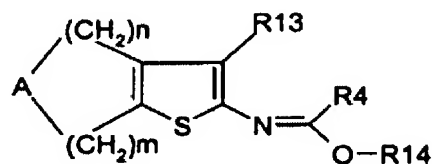
3-substituted 5,6,7,8-tetrahydropyrido[4',3':4,5]thieno[2, 3-d]pyrimidin-4(3H)-one derivatives;

3-substituted 3,5,6,8-tetrahydro-4H-pyrano[4',3':4,5]thieno[2,3-d]pyrimidin-4-one derivatives, or

3-substituted 3,5,6,8-tetrahydro-4H-thiopyrano[4',3':4,5]thieno[2,3-d]pyrimidin-4-one derivatives.

16. (Original) A process for preparing a compound according to claim 1

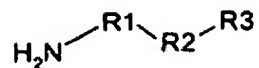
a) by reacting a compound of the formula (II)



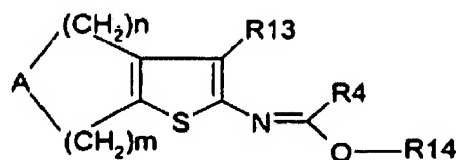
in which A, n, m and R4 have one of the meanings indicated in claim 1; R13 is CN or C,-3-

alkyl-O-CO-, and R14 is C1-3-alkyl,

with a primary amine of the formula (III)



in which R1, R2 and R3 have one of the meanings indicated in claim 1, and isolating and, optionally, converting the resulting compound into a physiologically tolerated salt thereof, or b1) by reacting a compound of the formula (II)

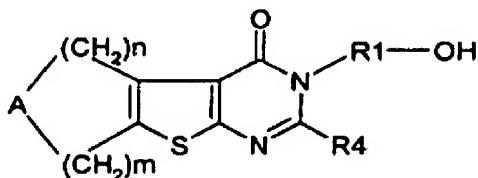


in which A, n, m and R4 have one of the meanings indicated in claim 1; R13 is CN or C1-3-alkyl-O-CO-, and R14 is C1-3-alkyl, with a primary amine of the formula (IV)

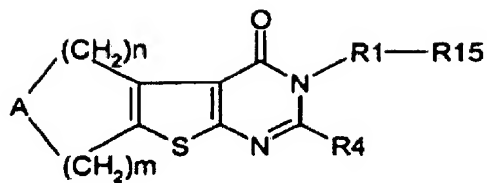


in which R1 has one of the meanings indicated in claim 1;

b2) reacting the resulting compound of the formula (V)

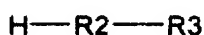


in which A, n, m, R4 and R1 have one of the meanings indicated in claim 1, with a halogenating agent such as thionyl chloride; and b3) reacting the resulting compound of the formula (VI)



in which A, n, m, R4 and R1 have one of the meanings indicated in claim 1, and R15 is halogen,

with a secondary amine of the formula (VII)



in which R2 and R3 have one of the meanings indicated in claim 1,

and isolating and, optionally, converting the resulting compound into a physiologically tolerated salt thereof.

17. (Canceled).

18. (Original) A pharmaceutical composition comprising at least one compound according to claim 1 and physiologically acceptable aids.

19. (Previously Presented) A method for the treatment of disorders of the central nervous system, which comprises administering a compound according to claim 1 to an individual in need thereof.

20. (Currently Amended) The method according to claim 19, wherein the disorder of the central nervous system is a neuropsychiatric disorder in-particular a depression.

21. (New) The method according to claim 19, wherein the disorder of the central nervous system is a neurodegenerative disorder.

- 22. (New) The method according to claim 19, where the disorder is depression.
- 23. (New) The method according to claim 19, where the disorder is anxiety.
- 24. (New) The method according to claim 19, where the disorder is schizophrenia.
- 25. (New) The method according to claim 19, where the disorder is dementia.
- 26. (New) The method according to claim 19, where the disorder is a cognitive disorder.
- 27. (New) The method according to claim 19, where the disorder is Alzheimers Disease.
- 28. (New) The method according to claim 19, where the disorder is an ischemic event.